

Please add the following new claims:

6. (New) An arc tube comprising:

an arc-tube body which incorporates a light-emission tube having a discharge space and
pinch seal portions formed on two sides of said discharge space, said tube being made of a quartz
glass; and

a pair of tungsten electrodes pinch-sealed to said pinch seal portions, respectively, such
that leading ends of said pair of tungsten electrodes project into said discharge space, wherein
average roughness of a surface of each of said tungsten electrodes is between .3 μm and 3
 μm .